

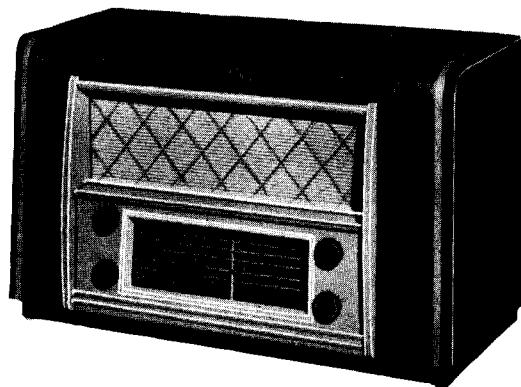
TECHNICAL INFORMATION AND SERVICE DATA

A.W.A. RADIOLA Model 558-TC

FIVE VALVE, TWO BAND, BATTERY/VIBRATOR
OPERATED SUPERHETERODYNE

ISSUED BY:

AMALGAMATED WIRELESS (AUSTRALASIA) LTD.



ELECTRICAL SPECIFICATIONS

Frequency Ranges:

Medium Wave	540-1,600 Kc/s. (555-187.5 Metres)
Short Wave	6-18 Mc/s. (50-16 Metres)
Intermediate Frequency	455 Kc/s.

Vibrator Cartridge:

4 volt operation, V6804.
6 volt operation, V5211.

Loudspeaker (Permanent Magnet):

9" x 6" Part No. 21515.
Transformer XA20.
V.C. Impedance 3 ohms at 400 C.P.S.

Undistorted Power Output:

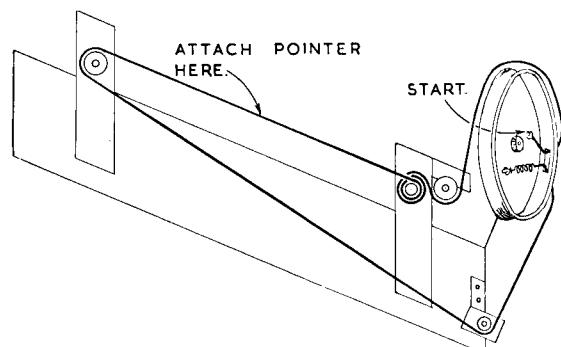
200 milliwatts.

Chassis Removal:

First remove the control knobs by pulling them straight off their spindles.

Then disconnect the Loudspeaker cable and Battery or Vibrator plug.

The chassis is held in the cabinet by four screws through the base of the cabinet. Removal of these enables the cabinet to be withdrawn.



Vibrator Power Unit Operation:

Unit No. 19190: 1 - 4 volt accumulator.
Unit No. 22770: 1 - 6 volt accumulator.

Battery Consumption:

1.5 volt "A" Battery, 0.3 Amp.
90 volts "B" Battery, 16 mA "FULL".
9 mA "SAVE".
4 volt vibrator operation, 0.8 Amp.
6 volt vibrator operation, 0.7 Amp.

Dial Lamps:

2.5 volt, 0.25 Amp. M.E.S.

Fuses:

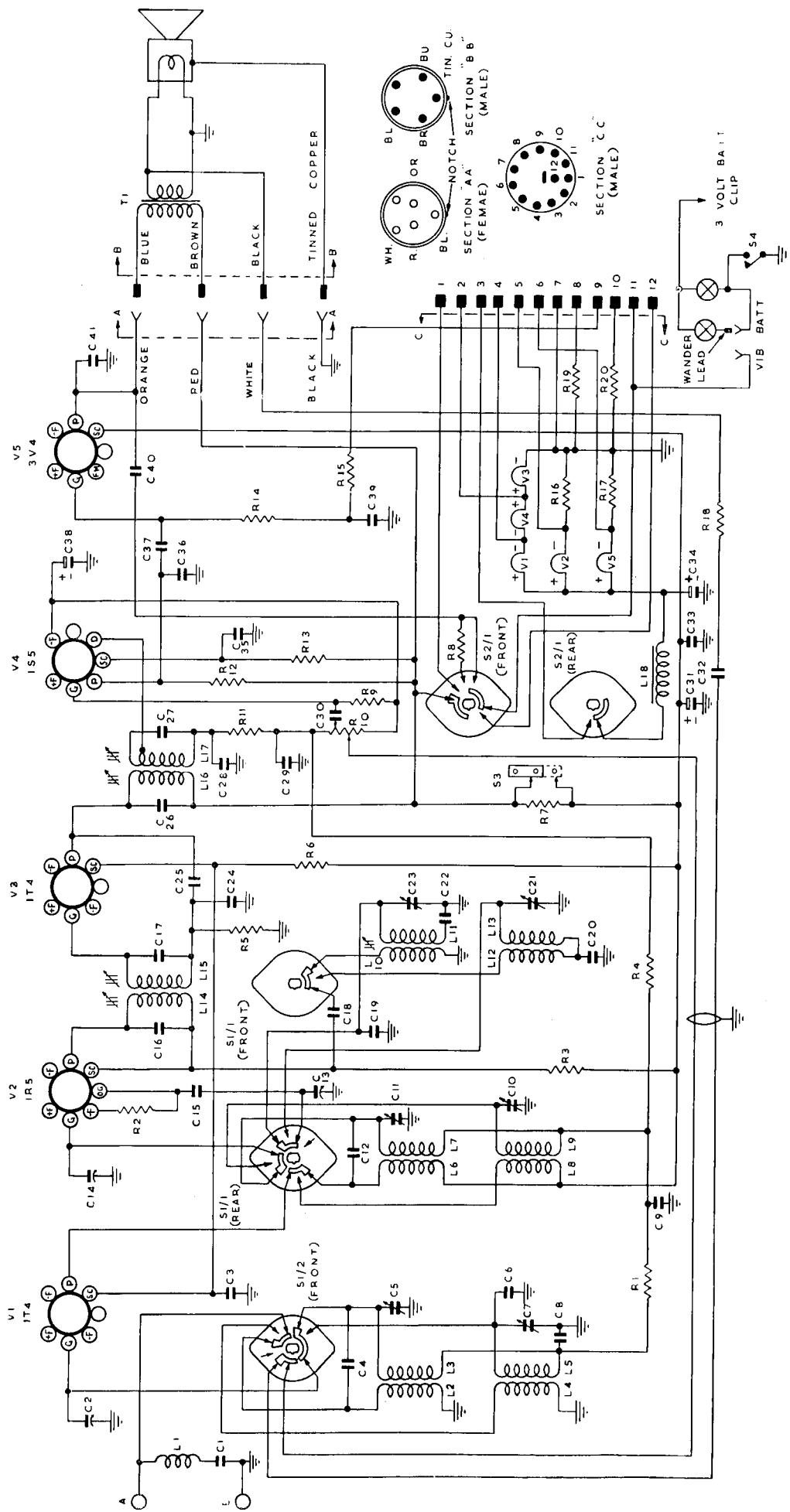
Battery Operation, 1/4-3/8 Amp.
Vibrator Operation, 3 Amp.

Valve Complement:

- (1) 1T4 — R.F. Amplifier.
- (2) 1R5 — Converter.
- (3) 1T4 — I.F. Amplifier.
- (4) 1S5 — Detector, A.F. Amplifier, A.V.C.
- (5) 3V4 — Output.

Drive Cord Replacement:

The accompanying diagram shows the route of the cord and the method of attachment.



ALIGNMENT PROCEDURE

Manufacturer's Setting of Adjustments:

The receiver is tested by the manufacturer with precision instruments and all adjusting screws are sealed. Re-alignment should be necessary only when components in tuned circuits are repaired or replaced, or when it is found that the seals over the adjusting screws have been broken.

It is especially important that the adjustments should not be altered unless in association with the correct testing instruments listed below.

Under no circumstances should the plates of the ganged tuning capacitor be bent, as the unit is accurately aligned during manufacture and cannot be re-adjusted unless by skilled operators using special equipment.

For all alignment operations, connect the low side of the signal generator to the receiver chassis and keep the generator output as low as possible to avoid A.V.C. action. Also, keep the volume control in the maximum clockwise position.

Testing Instruments:

- (1) A.W.A. Junior Signal Generator, type 2R7003 or,
- (2) A.W.A. Modulated Oscillator, series J6726.
If the modulated oscillator is used, connect a 0.25 megohm non-inductive resistor across the output terminals, and for short wave alignment an additional 400 ohms non-inductive resistor in series with the "high" output lead of the instrument.
- (3) A.W.A. Output Meter, type 2M8832.

ALIGNMENT TABLE

Order	Connect "high" side of Generator to:	Tune Generator to:	Tune Receiver Dial to:	Adjust for maximum peak output:
1	R.F. Section of Gang (Centre Section)	455 Kc/s.	540 Kc/s. (4QL)	L17 Core.
2	R.F. Section of Gang (Centre Section)	455 Kc/s.	540 Kc/s. (4QL)	L16 Core.
3	R.F. Section of Gang (Centre Section)	455 Kc/s.	540 Kc/s. (4QL)	L15 Core.
4	R.F. Section of Gang (Centre Section)	455 Kc/s.	540 Kc/s. (4QL)	L14 Core.
Repeat the above adjustments until the maximum output is obtained.				
5	Aerial Terminal	600 Kc/s.	600 Kc/s. (7ZL)	Osc. Core Adj. (L11)*
6	Aerial Terminal	1500 Kc/s.	1500 Kc/s. (3AK)	Osc. Adj. (C23)
7	Aerial Terminal	1500 Kc/s.	1500 Kc/s. (3AK)	R.F. Adj. (C11)
8	Aerial Terminal	1500 Kc/s.	1500 Kc/s. (3AK)	Aer. Adj. (C5)
Repeat adjustments 5, 6, 7, and 8.				
9	Aerial Terminal	16 Mc/s.	16 Mc/s.	Osc. Adj. (C21)†
10	Aerial Terminal	16 Mc/s.	16 Mc/s.	R.F. Adj. (C10)‡
11	Aerial Terminal	16 Mc/s.	16 Mc/s.	Aer. Adj. (C7)‡

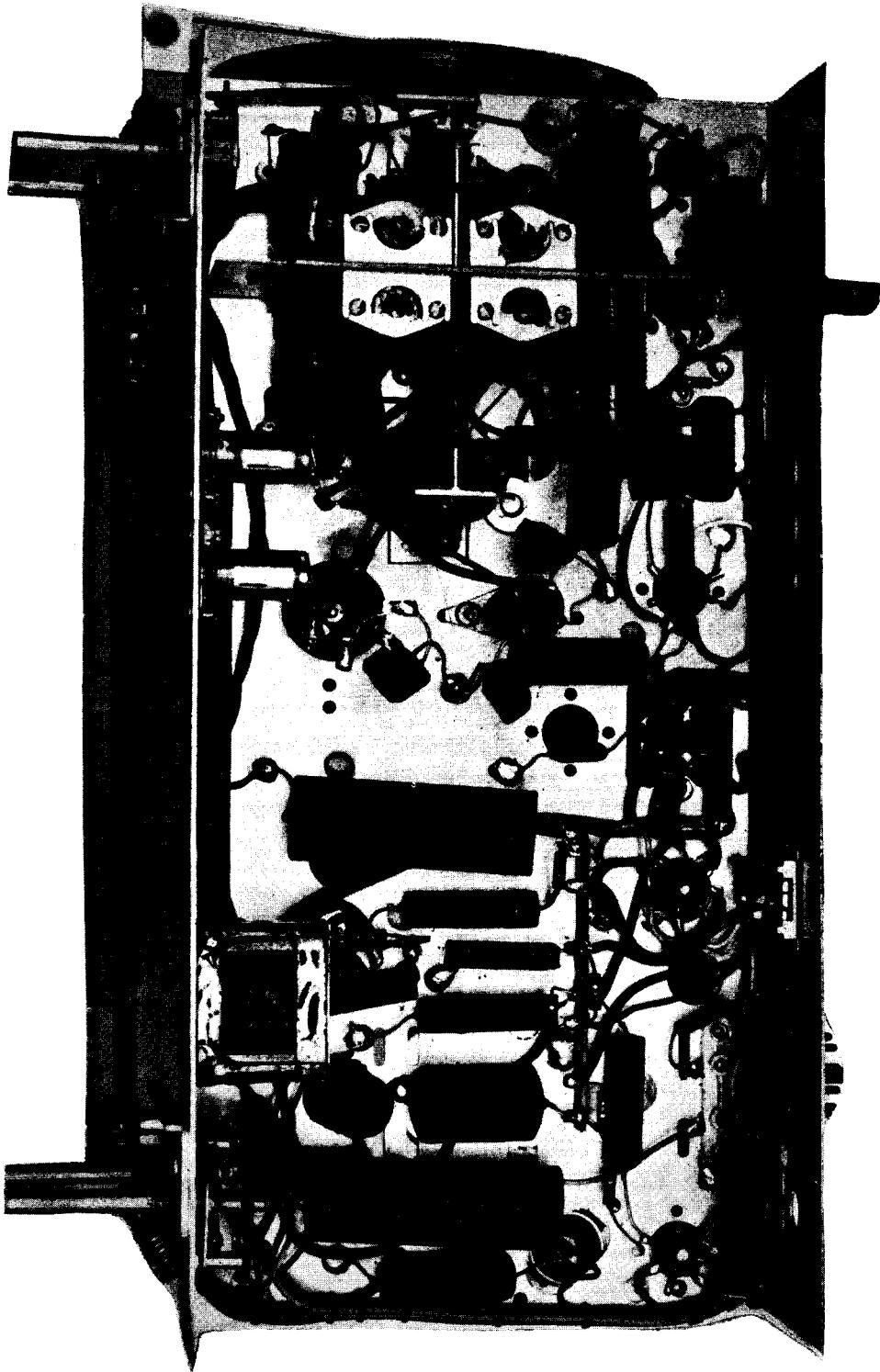
* Rock the tuning control back and forth through the signal.

† Use minimum capacity peak if two can be obtained. Check to determine that C21 has been adjusted to correct peak by tuning the receiver to approximately 15.09 Mc/s. where a weaker signal should be received.

‡ Use maximum capacity peak if two can be obtained.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

A B C D E F G H J K L M



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

FIG. 2.

CIRCUIT CODE - RADIOLA 558-TC

Code No.	Description	Part. No.	Fig. No.	Location	Code No.	Description	Part. No.	Fig. No.	Location
L1	INDUCTORS				C11	2-20 $\mu\mu F$ air trimmer	19559	2	F14
L2, L3	Filter Unit (including C1)	9382	2	115	C12	6.8 $\mu\mu F$ ceramic	19559	2	D13
Aerial Coil 540-1600 Kc/s	15454	2	J16	C13	12-430 $\mu\mu F$ tuning	18321	1	G7	
Aerial Coil 6-18 Mc/s	15456	2	E16	C14	12-430 $\mu\mu F$ tuning	18321	1	G5	
R.F. Coil 540-1600 Kc/s	23891	2	E13	C15	47 $\mu\mu F$ moulded mica	18321	1	G13	
R.F. Coil 6-18 Mc/s	26060	2	J13	C16	100 $\mu\mu F$ silvered mica (in 1st I.F.)	18321	1	K12	
Oscillators Coil 540-1600 Kc/s	3207A	2	H10	C17	100 $\mu\mu F$ silvered mica (in 1st I.F.)	18321	1	K12	
Oscillators Coil 6-18 Mc/s	32484	2	E10	C18	0.05 μF paper 200V working	18321	1	J12	
1st I.F. Transformer	32700	1	J6	C19	9 $\mu\mu F$ mica	18321	1	H11	
2nd I.F. Transformer	22703	1	J10	C20	4,000 $\mu\mu F$ \pm 2½% padder	18321	1	F10	
Filament Choke	26866	2	D6	C21	2-20 $\mu\mu F$ air trimmer	19659	2	D11	
R1	RESISTORS				C22	490 $\mu\mu F$ \pm 2½% padder	19659	2	G10
0.1 megohm	1/2 watt	2	E13	C23	2-20 $\mu\mu F$ air trimmer	19659	2	D13	
0.1 megohm	1/2 "	2	K14	C24	0.02 μF paper 600V working	19659	2	J12	
10,000 ohms	1/2 "	2	K12	C25	9 $\mu\mu F$ mica	19659	2	K10	
2.7 megohms	1/2 "	2	J10	C26	100 $\mu\mu F$ silvered mica (in 2nd I.F.)	19659	2	K9	
2.7 megohms	1/2 "	2	K13	C27	100 $\mu\mu F$ silvered mica (in 2nd I.F.)	19659	2	K9	
R6	40,000 ohms	1/2 "	K11	C28	100 $\mu\mu F$ mica	19659	2	H9	
R7	10,000 ohms	1/2 "	L6	C29	100 $\mu\mu F$ mica	19659	2	K8	
R8	10,000 ohms	1/2 "	D4	C30	0.01 μF paper 600V working	19659	2	G7	
R9	10.0 megohms	1/2 "	H7	C31	200 μ V. electrolytic	19659	2	H17	
R10	0.5 megohms Volume Control	1/2 " (tapped 40,000 ohms)	26890	C32	0.01 μF paper 600V working	19659	2	E5	
R11	22,000 ohms	1/2 watt	2	C33	0.1 μF paper 200V working	19659	2	F2	
R12	0.68 megohms	1/2 "	J9	C34	400 μF 12 P.V. Electrolytic	19659	2	F3	
R13	3.3 megohms	1/2 "	H6	C35	0.05 μF paper 200V working	19659	2	G5	
R14	0.47 megohms	1/2 "	H5	C36	200 $\mu\mu F$ mica	19659	2	G6	
R15	0.47 megohms	1/2 "	J3	C37	0.05 μF paper 200V working	19659	2	J4	
R16	50 ohms	1/2 "	J4	C38	400 μF 12 P.V. Electrolytic	19659	2	F8	
R17	25 ohms	1/2 "	L4	C39	0.4 μF paper 200V working	19659	2	G4	
R18	0.27 megohms	1/2 "	L4	C40	0.05 μF paper 200V working	19659	2	D3	
R19	330 ohms	1/2 "	E6	C41	0.0025 μF paper 600V working	19659	2	K3	
R20	330 ohms	1/2 "	L5	T1	TRANSFORMERS				
CAPACITORS				T1	Loudspeaker Transformer	X A20			
C1	47 $\mu\mu F$ Mica	18321	2	K16	LOUDSPEAKER				
C2	12-430 $\mu\mu F$ tuning			G3	9" x 6" Permanent Magnet	21515			
C3	0.1 μF Paper 200V working	18321	2	H10					
C4	6.8 $\mu\mu F$ ceramic			S1	Range Switch	27094	2	G16	
C5	2-20 $\mu\mu F$ air trimmer	19659	2	S2	Battery-Tone Switch	33070	2	D3	
C6	14 $\mu\mu F$ mica			S3	Battery-Save Switch	22775	2	L7	
C7	2-20 $\mu\mu F$ air trimmer	19659	2	S4	Pilot Lamp Switch (on Tuning Spindle)	33071	1	D4	
C8	0.05 μF paper 200V working				VIBRATOR POWER UNIT				
C9	0.05 μF paper 200V working	19659	2	F14	6 Volt Power Unit	22770			
C10	2-20 $\mu\mu F$ air trimmer			H14	4 Volt Power Unit	19190			

REPLACEMENT PARTS

Cabinet	28116
Dial Scale	32217
Knob Assembly	26516
Knob Assembly, Range & Battery/Tone	26519
Lamp Holder	31804
Plug, 12 pin	17757
Pointer	33048
Socket 7 pin Valve	19965
7 pin Valve (floating)	23274
Spring, drive	1741

D.C. RESISTANCE OF WINDINGS

Winding	D.C. Resistance In ohms
Aerial Coil (M.W.):	
Primary (L2)	12
Secondary (L3)	5
Aerial Coil (S.W.):	
Primary (L4)	3
Secondary (L5)	*
R.F. Coil (M.W.):	
Primary (L6)	40
Secondary (L7)	5
R.F. Coil (S.W.):	
Primary (L8)	*
Secondary (L9)	*
Oscillator Coil (M.W.):	
Primary (L10)	1.5
Secondary (L11)	6
Oscillator Coil (S.W.):	
Primary (L12)	*
Secondary (L13)	*
I.F. Filter (L1)	17.5†
L.T. Choke (L18)	*
1st I.F. Transformer Windings	10
2nd I.F. Transformer Windings	7.5
Smoothing Choke (L75)	200
R.F. Filter Chokes (L73, L74)	*
R.F. Filter Chokes (L71, L72)	9
Loudspeaker Input Transformer (T1):	
Primary	500
Secondary	*
Vibrator Transformer (T71):	
17568 Primary	*
17568 Secondary	300
17892 Primary	*
17892 Secondary	150

The above readings were taken on a standard chassis, but substitution of materials during manufacture may cause variations and it should not be assumed that a component is faulty if a slightly different reading is obtained.

* Less than 1 ohm.

† In some receivers this reading may be as high as 60 ohms.

SOCKET VOLTAGES

VALVE	Bias	Screen to		Anode to		Anode		Filament		
	B	V	Chassis	Volts:	Chassis	Volts:	Current	mA:	Volts:	
1T4 R.F. Amp.	F\$	—	—	47*	47*	90	90	1.3	1.3	1.3—1.4
	S			25*		48*		0.7		
1R5 Converter	F	—	—	59*	59*	59*	59*	0.9	0.9	1.3—1.4
	S			34*		34*		0.4		
1T4 I.F. Amp.	F	—	—	47*	47*	90	90	1.7	1.7	1.3—1.4
	S			25*		90		1.0		
1S5 Det., A.F. Amp. A.V.C.	F	—	—	24†	24†	27†	27†	0.1	0.1	1.3—1.4
	S			24†		27†		0.1		
3V4 Output	F	—4.5	—4.5	90	90	86	86	6.3	6.3	1.3—1.4
	S	—2.5		48		88		3.8		

* These readings may vary depending on the resistance of the voltmeter used.

† Calculated from measured current. An ordinary voltmeter will register a lower value.

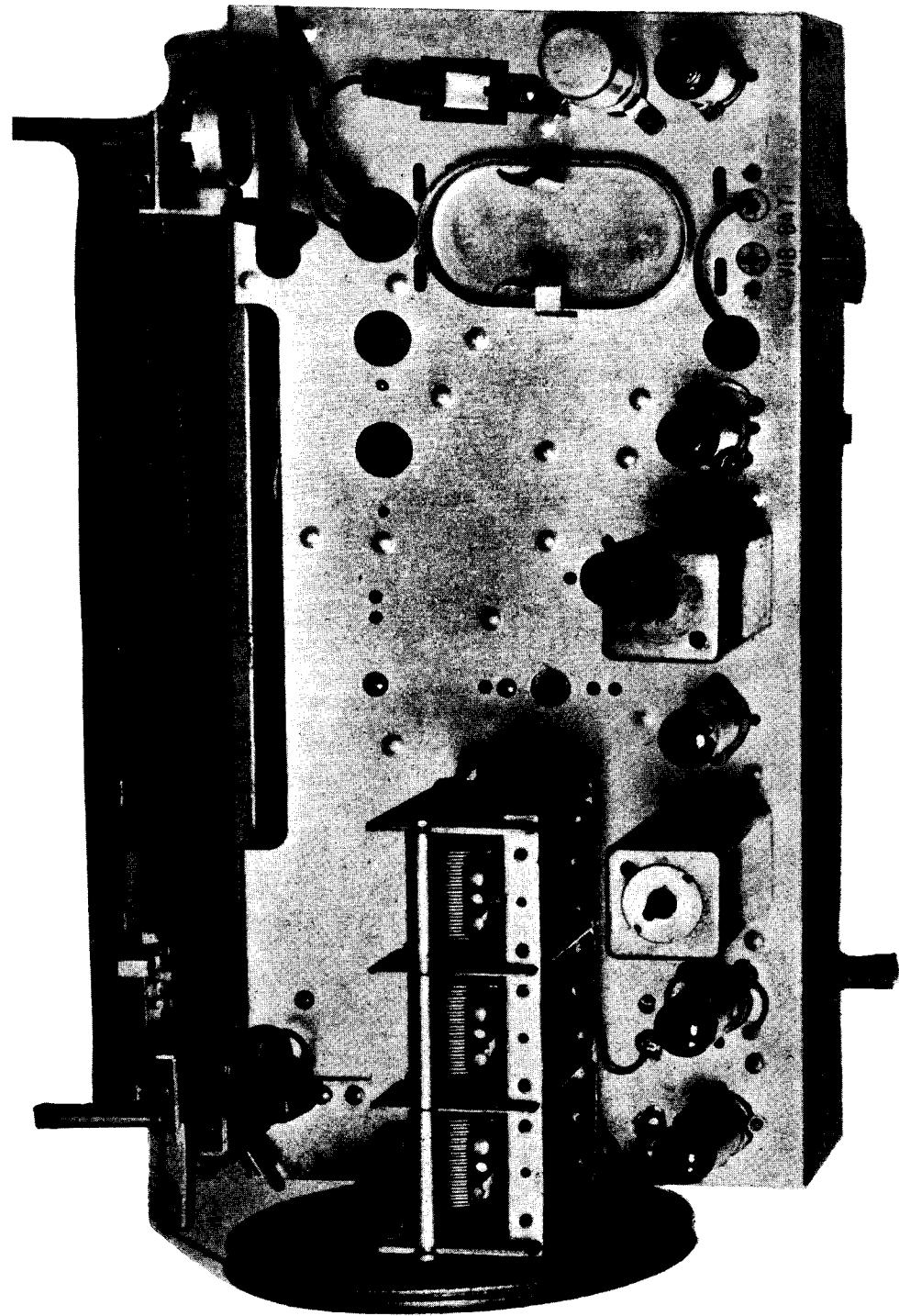
\$ F = "Full" position of Battery/Saving Switch.

S = "Save" position of Battery/Saving Switch.

NOTE:—Battery Saving should not be used on vibrator operation.

I 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

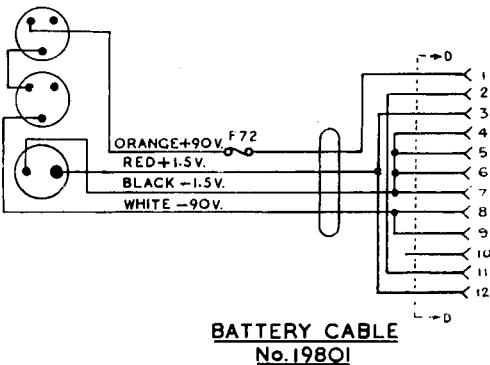
A B C D E F G H J K L M



A B C D E F G H J K L M

F I G . I .

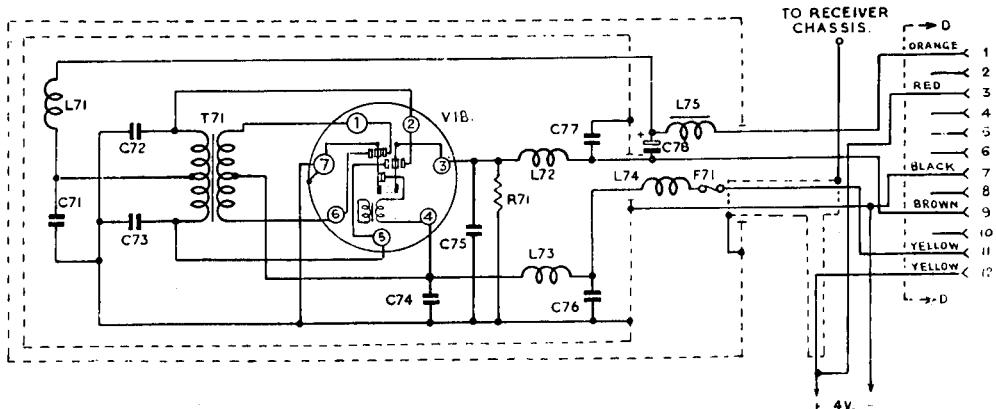
PLUGS VIEWED
FROM WIRING SIDE.



VIBRATOR POWER UNITS 19190, 22770 — CIRCUIT CODE.

Code No.	Description	Part No.	Code No.	Description	Part No.	Code No.	Description	Part No.
INDUCTORS								
L71	R.F. Choke	13809	C72	0.02 μ F Paper, 600v. working		C78	20 μ F 200, P.V. Electrolytic	
L72	R.F. Choke	13809	C73	0.02 μ F Paper, 600v. working		C79	0.1 μ F Paper, 200v. working (22770 only)	
L73	R.F. Choke	3149						
L74	R.F. Choke	3149	C74	0.1 μ F Paper, 400v. working	T71	TRANSFORMERS		
L75	L.F. Choke	8321	C75	0.01 μ F Paper, 600v. working		Vibrator Transformer (19190) (22770)	17568 17892	
RESISTORS								
R71	150 ohms, 1 watt (wire-wound)		C76	0.1 μ F Paper, 400v. working		Vibrator Cartridge (19190)	V6804	
R72	12 ohms, $\pm 5\%$, 1 watt (22770 only)		C77	0.01 μ F Paper, 600v. working		Vibrator Cartridge (22770)	V5211	
C71	0.01 μ F Paper, 600v. working							

VIBRATOR POWER UNIT No.19190



6 VOLT VIBRATOR POWER UNIT NO.22770

